

**For Vacuum Ultraviolet Light Detection**  
**Cs-Te (R7311), Cs-I (R7511) Photocathode, MgF<sub>2</sub> Window,**  
**13mm (1/2 Inch) Diameter, 9-stage, Side-on Type**

### FEATURES

- Sensitivity in the Vacuum Ultraviolet Region
  - R7311.....115 to 320nm
  - R7511.....115 to 195nm
- High Quantum Efficiency (at 121.6nm)
  - R7311.....17.3% (Typ.)
  - R7511.....26.5% (Typ.)
- High Anode Sensitivity
  - R7311 (at 200nm)..... $3.8 \times 10^5$  A/W (Typ.)
  - R7511 (at 121.6nm)..... $5.2 \times 10^4$  A/W (Typ.)

### APPLICATIONS

- Emission Spectroscopy, etc.

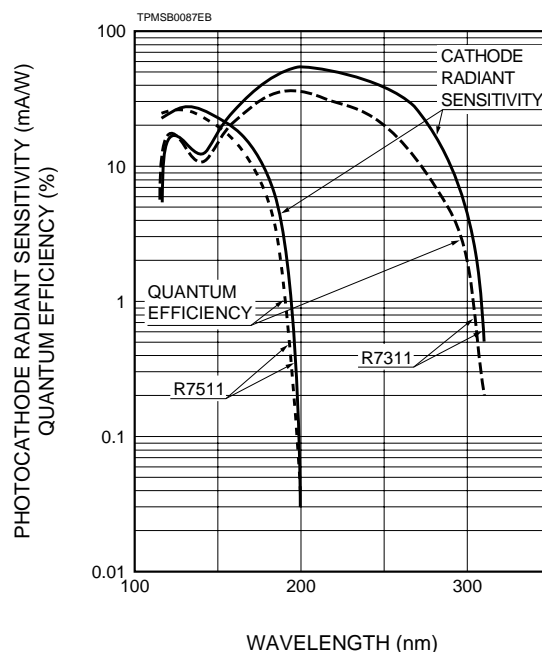


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### GENERAL

Parameter		R7311	R7511	Unit
Spectral Response		115 to 320	115 to 195	nm
Wavelength of Maximum Response		200	130	nm
Photocathode Material		Cs-Te	Cs-I	—
Window Material		MgF <sub>2</sub>		—
Minimum Effective Area		4 × 5		mm
Dynode	Structure	Circular-cage		—
	Number of Stage	9		—
	Material	Sb-Cs		—
Direct	Anode to Dynode No.9	Approx. 1.7		pF
Interelectrode Capacitances	Anode to All Other Electrodes	Approx. 2.0		pF
Base		11-pin base		—
Weight		7		g
Suitable Socket for Base (supplied)		E678-11H		—

Figure 1: Typical Spectral Response



# PHOTOMULTIPLIER TUBES R7311, R7511

## MAXIMUM RATINGS (Absolute Maximum Values)

Parameter		Value	Unit
Supply Voltage	Between Anode and Cathode	1250	Vdc
	Between Each Succeeding Electrode	150	Vdc
Average Anode Current		0.01	mA
Ambient Temperature		-80 to +50	°C

## CHARACTERISTICS (at 25°C)

Parameter		R7311			R7511			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	
Cathode Sensitivity	Radiant <sup>Ⓐ</sup>	—	55	—	—	26	—	mA/W
	Quantum	at 121.6nm	17.3	—	—	26.5	—	%
	Efficiency	at 200nm	34.1	—	—	—	—	%
Anode Sensitivity	Radiant	at 121.6nm	$1.2 \times 10^5$	—	—	$5.2 \times 10^4$	—	A/W
		at 200nm	$3.8 \times 10^5$	—	—	—	—	A/W
Gain		—	$7.0 \times 10^6$	—	—	$2.0 \times 10^6$	—	—
Anode Dark Current		—	0.3	3	—	0.3	3	nA
Time Response	Anode Pulse Rise Time	—	1.4	—	—	1.4	—	ns
	Electron Transit Time	—	15	—	—	15	—	ns

NOTE: <sup>Ⓐ</sup> R7311 at 200nm, R7511 at 121.6nm

## VOLTAGE DISTRIBUTION RATIO

Electrodes	K	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	P
Ratio	1	1	1	1	1	1	1	1	1	1	1

Supply Voltage: 1000Vdc, K: Cathode, Dy: Dynode, P: Anode

Figure 2: Typical Gain Characteristics

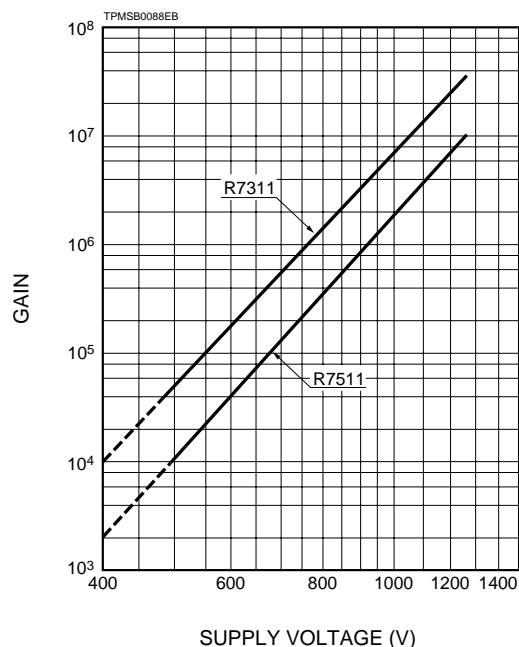
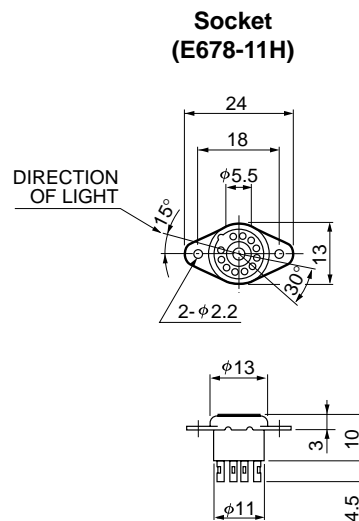
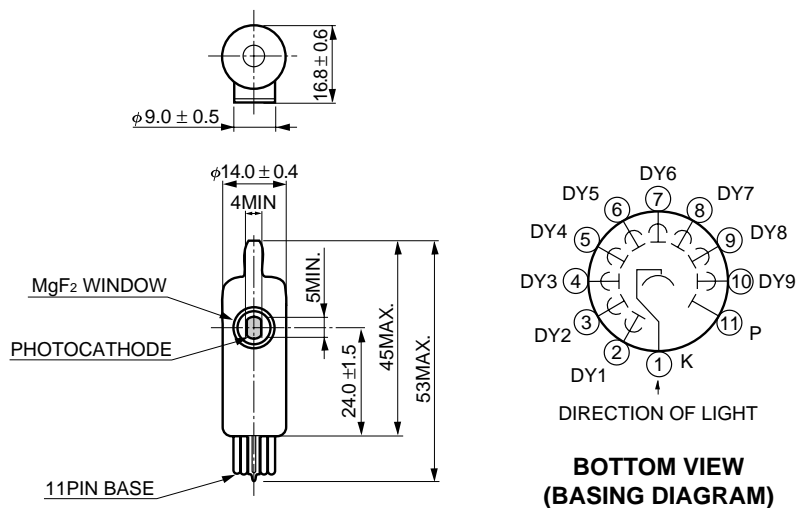


Figure 3: Dimensional Outline and Basing Diagram (Unit: mm)



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